

**Abstract**

The present invention relates to an *in vitro* method for the quantification of beta-amyloid peptide (A $\beta$ ) in mammalian tissue samples and body fluids comprising spiking of isotope labeled A $\beta$  into a sample containing A $\beta$  and determining labeled and unlabeled A $\beta$  by mass spectrometry. The present invention also relates to the use of the methods of the invention for the determination of the A $\beta$  content in tissue sample and body fluid as well as the determination of A $\beta$  microheterogeneities.

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